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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/043,983 | 01/09/2002 | Regan Myers | 8114 PA01 | 8465 |

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EXAMINER

MATTIS, JASON E

ART UNIT PAPER NUMBER

2665

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 10/043,983 | Applicant(s) MYERS, REGAN | |
| | Examiner Jason E. Mattis | Art Unit 2665 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 7, 10-11, and 15-16 is/are rejected.
- 7) ☒ Claim(s) 2-4, 6, 8, 9, 12-14 and 17-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. Figures 1, 2, and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 10-11, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art in view of Schoenblum et al. (U.S.

Publication US 2001/0010682 A1) and Wang et al. (U.S. Publication US 2002/0089978 A1).

With respect to claim 1, the Applicant's admitted prior art discloses a buffer meter for monitoring a data level of data in a buffer and for outputting an arbitration level signal for prompting the data to be read from the **buffer (See pages 3-5 paragraphs 8-11 and Figure 1 of the Applicant's specification for reference to FIFO meter 18, which is a buffer meter that monitors a data level of FIFO buffer 20 and outputs a fullness measure, which is an arbitration level signal, to an arbitration logic 22 prompting data to be read form the buffer 20)**. Applicant's admitted prior art also discloses an actual counter for monitoring the data level of the buffer and having an actual count output **(See pages 4-5 paragraphs 9-11 and Figure 1 of the Applicant's specification for reference to FIFO meter 18 monitoring the fullness of the FIFO buffer 20 and outputting this fullness level to the arbitration logic 22)**. The Applicant's admitted prior art does not discloses a minimum rate counter generating a minimum count output to guarantee a minimum rate of reading data form the buffer and a maximum rate counter generating a maximum count output limiting the data read form the buffer to a maximum rate. The Applicant's admitted prior art does disclose a level select means determining an arbitration level signal based on the actual count output **(See pages 4-5 paragraph 11 and Figure 1 of the Applicant's specification for reference to arbitration logic determining an arbitration level for each FIFO buffer based on the fullness measures received form each FIFO meter)**. The Applicant's admitted prior art does not disclose a flow control enable input.

With respect to claim 11, the Applicant's admitted prior art discloses a method for controlling data flow from a buffer of a plurality of buffers connected to a multiplexer that reads the buffer based upon an arbitration level received from a buffer meter monitoring the buffer **(See pages 3-5 paragraphs 8-11 and Figure 1 of the Applicant's specification for reference to FIFO meter 18, which is a buffer meter that monitors a data level of FIFO buffer 20 and outputs a fullness measure, which is an arbitration level signal, to an arbitration logic 22 prompting data to be read from the buffer 20 and output to a multiplexer 24 that is connected to a plurality of FIFO buffers 20...38)**. The Applicant's admitted prior art does not disclose setting a flow control input to either an enable or disable state. The Applicant's admitted prior art also does not disclose generating a minimum and maximum count for guaranteeing a minimum rate and limiting to a maximum rate the reading of data from the buffer. Applicant's admitted prior art discloses generating an actual count of data in the buffer **(See pages 4-5 paragraphs 9-11 and Figure 1 of the Applicant's specification for reference to FIFO meter 18 monitoring the fullness of the FIFO buffer 20 and outputting this fullness level to the arbitration logic 22)**. The Applicant's admitted prior art also discloses generating the arbitration level signal based on the actual count output **(See pages 4-5 paragraph 11 and Figure 1 of the Applicant's specification for reference to arbitration logic determining an arbitration level for each FIFO buffer based on the fullness measures received from each FIFO meter)**.

With respect to claim 15, the Applicant's admitted prior art discloses a multiplexer system for the transmission of data from a plurality of data channels (**See pages 3-5 paragraphs 8-11 and Figure 1 of the Applicant's specification for reference to system 10, which is a multiplexer system, transmitting data from multiple channels**). The Applicant's admitted prior art also discloses the data channels outputting packets of data with each channel comprising a means for accepting and requesting data from a data server (**See page 4 paragraph 9 and Figure 1 of the Applicant's specification for reference to each channel having a flow control means for accepting and requesting data from a corresponding server 6, 8**). Applicant's admitted prior art further discloses a buffer for holding the accepted data (**See page 4 paragraph 9 and Figure 1 of the Applicant's specification for reference to FIFO buffers 20, 38 holding data packets**). Applicant's admitted prior art also discloses a smart meter generating an arbitration level comprising an actual count output (**See page 5 paragraph 11 and Figure 1 of the Applicant's specification for reference to FIFO meters 18, 36 outputting a fullness measure, which is an actual count**). Applicant's admitted prior art does not disclose a flow control enable input. Applicant's admitted prior art does disclose a free space output connected to the input means with the input means requesting data from the server to fill the buffer based on the reported free space output (**See page 4 paragraph 10 and Figure 1 of the Applicant's specification for reference to forwarding buffer fullness to flow-control logic 14, 32, with the flow-control logic using the fullness measure to determine when to request data from the server to fill the buffer**).

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Applicant's admitted prior art does not disclose a minimum count output. The Applicant's admitted prior art does disclose a level select means determining an arbitration level signal based on the actual count output (**See pages 4-5 paragraph 11 and Figure 1 of the Applicant's specification for reference to arbitration logic determining an arbitration level for each FIFO buffer based on the fullness measures received from each FIFO meter**). The Applicant's admitted prior art also discloses an arbitration logic means selecting a data channel and a multiplexer controlled by the arbitration logic means (**See pages 4-5 paragraph 11 of the Applicant's admitted prior art for reference to the arbitration logic 22 selecting a channel based on the fullness measures and for reference to the arbitration logic 22 controlling a multiplexer 26 that outputs data from the buffers**).

With respect to claim 1, 11, and 15, Schoenblum et al., in the field of communications, discloses a minimum rate counter generating a minimum count output to guarantee a minimum rate of reading data from the buffer and a maximum rate counter generating a maximum count output limiting the data read from the buffer to a maximum rate (**See pages 4-5 paragraphs 36-40 of Schoenblum et al. for reference to a transmission rate controller (TRC) 94 acting as both a minimum rate counter and a maximum rate counter by setting both a minimum rate and a maximum rate at which bits are to be moved into and out of a statistical multiplexer buffer (SMB) 106, such that the buffer fullness is monitored with respect to both minimum and maximum rates to prompt data to be output from the buffer 106**). Using a minimum rate counter generating a minimum count output to guarantee a minimum rate of

reading data from the buffer and a maximum rate counter generating a maximum count output limiting the data read from the buffer to a maximum rate has the advantage of preventing both buffer overflow and buffer underflow such that the output bandwidth is always used in the most efficient way without dropping packets at the buffer **(See page 4 paragraph 38 of Schoenblum et al. for reference to this advantage).**

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Schoenblum et al., to combine using a minimum rate counter generating a minimum count output to guarantee a minimum rate of reading data from the buffer and a maximum rate counter generating a maximum count output limiting the data read from the buffer to a maximum rate, as suggested by Schoenblum et al., with the system and method of the Applicant's admitted prior art, with the motivation being to prevent both buffer overflow and buffer underflow such that the output bandwidth is always used in the most efficient way without dropping packets at the buffer.

With respect to claim 1, 11, and 15, Wang et al., in the field of communications, discloses a flow control enable input **(See page 2 paragraph 23 of Wang et al. for reference to a flow control enable/disable input).** Using a flow control enable input has the advantage of allowing a user control over when to apply quality of service standards to a data flow.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Wang et al., to combine using a flow control enable input, as suggested by Wang et al., with the system and method of the

Applicant's admitted prior art and Schoenblum et al., with the motivation being to allow a user control over when to apply quality of service standards to a data flow.

With respect to claims 10 and 16, the Applicant's admitted prior art discloses that the meter is implemented in one of software, hardware, or a combination of software and hardware (**See pages 3-5 paragraphs 8-11 and Figure 1 of the Applicant's specification for reference to implementing the FIFO meter in hardware and software**).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art in view of Schoenblum et al. and Wang et al., as applied to claims 1, 10-11, and 15-16 above, and in further view of Yamato (U.S. Pat. 5889761).

With respect to claims 5 and 7, the combination of the Applicant's admitted prior art, Schoenblum et al., and Wang et al. does not disclose that the minimum and maximum rates are user-specified.

With respect to claims 5 and 7, Yamato discloses user specified minimum and maximum rates **(See column 1 lines 35-55 of Yamato for reference to a user setting a minimum and maximum rate)**. User specified minimum and maximum rates have the advantage of allowing a user more control over the quality of service of a data flow.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Yamato, to combine user specified minimum and maximum rates, as suggested by Yamato, with the system and method of the Applicant's admitted prior art, Schoenblum et al., and Wang et al., with the motivation being to allow a user more control over the quality of service of a data flow.

Allowable Subject Matter

6. Claims 2-3, 6, 8-9, 12-14, and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thompson (U.S. Pat. 5881245) discloses another MPEG data multiplexing system with rate control. Lam et al. (U.S. Pat. 6198742) discloses another method of rate control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jem

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a stylized flourish at the end.

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600